AMSAT News Service Weekly Bulletins
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AMSAT NEWS SERVICE
ANS-017

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://amsat.org publishes news of Amateur Radio in space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat dot org.

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SB SAT @ AMSAT $ANS-017.01
ANS-017 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 017.01
>From AMSAT HQ Washington, DC
January 17, 2021
To All RADIO AMATEURS
BID: $ANS-017.01

RadFxSat-2 Launch Delayed Until Sunday, January 17, 2021

Virgin Orbit announced a new launch date of No Earlier Than (NET) Sunday, January 17, 2021 with additional windows in January if needed. The specific window is 10:00 to 14:00 PST (1800 to 2200 UTC). Virgin Orbit seems to be using its Twitter account to make their public announcements, so that may be worth watching at https://twitter.com/Virgin_Orbit.

AMSAT does not have preliminary TLE for the upcoming launch. If you are hoping to snag the first contact, Jerry Buxton, N0JY, AMSAT VP - Engineering suggests checking the nasabare.text TLE just prior to launch, maybe thirty-minutes after launch or until they are posted.

[ANS thanks AMSAT for the above information.]

November/December 2020 AMSAT Journal Now Online

AMSAT members can read the November/December 2020 edition of the AMSAT Journal online. This edition includes:

- Apogee View - Robert Bankston, KE4AL
- Engineering Update - Jerry Buxton, N0JY
- Educational Relations Update - Alan Johnston, KU2Y
- Development Update - Frank Karnauskas, N1UW
- For Beginners - Amateur Radio Satellite Primer VIII - Keith Baker, KB1SF/VA3KSF
- Working FalconSat-3 Packet BBS with the Kenwood TH-D72A - Brian Wilkins, KO4AQF
- Testing a More Fade-resistant BPSK Demodulator for Fox Linear
- Transponder Spacecraft - Chris Thompson, G0KLA/AC2CZ
- The Success Story of SMOG-P, the World's Smallest Satellite - Gabor Geczy
- Starting My Adventure With Amateur Radio Satellites - James Johnson, VE7HJ

The AMSAT Journal is a bi-monthly magazine for amateur radio in space enthusiasts, published by the Radio Amateur Satellite Corporation (AMSAT). Each issue is your source for hardware and software projects, technical tips, STEM initiatives, operational activities, and news from around the world. Join AMSAT today to start receiving your bi-monthly issue of The AMSAT Journal. Members can access the latest issue of The AMSAT Journal as well as archived editions at https://launch.amsat.org/The_AMSAT_Journal/.

[ANS thanks AMSAT for the above information.]

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Seven US Schools Moved Forward in ARISS Selection Process

January 7, 2021 - Amateur Radio on the International Space Station (ARISS) is pleased to announce the schools/host organizations selected for the July-December 2021 contact window. A total of seven of the submitted proposals during the recent proposal window have been accepted to move forward in the processes of planning to host a scheduled amateur radio contact with crew on the ISS. The primary goal of the ARISS program is to engage young people in Science, Technology, Engineering, Arts and Math (STEAM) activities and raise their awareness of space communications, radio communications, space exploration, and related areas of study and career possibilities.

The ARISS program anticipates that NASA will be able to provide scheduling opportunities for the seven US host organizations during the July through December 2021 time period. They are now at work completing an acceptable equipment plan that demonstrates their ability to execute the ham radio contact. Once their equipment plan is approved by the ARISS Technical Mentors, the final selected schools/organizations will be scheduled as their availability and flexibility match up with the scheduling opportunities offered by NASA.

The seven schools advancing in the selection process are:

Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville, TN
Tarwater Elementary, Chandler, AZ
Museum of Science & Technology, Syracuse, NY
SpaceKids Global and Girl Scouts of Citrus, Winter Park, FL
Civil Air Patrol - Illinois Wing, St Charles, IL
Children's National Hospital, Washington, DC
Savannah River Academy, Grovetown, GA

[ANS thanks Dave Jordan, AA4KN for the above information.]

CubeSat to Test Harnessing Earth's Magnetic Field for Propulsion

Although not an Amateur Radio satellite, a student-built CubeSat is of interest to the Amateur Radio Satellite Service. Built at the University of Michigan, it will investigate whether small satellites can be maintained in low Earth orbit without thrusters or propellant. Scheduled to launch from the Mojave Air and Space Port on Virgin Orbit's Launch Demo 2 on January 10, 2020, the Miniature Tether Electrodynamics Experiment-1 (MiTEE-1) will test the concept of using the Earth's magnetic field to generate thrust.

The usual way to overcome this is to use thrusters to boost the satellite into a higher orbit, but for smaller spacecraft, and especially CubeSats, this isn't currently an option - although efforts like the ThermaSat design are looking to bring lightweight propulsion systems to CubeSats. The result is that many perfectly good pieces of hardware are destroyed prematurely, deorbiting in a matter of months or even days.

The MiTEE project will test the feasibility of using electromagnetism to provide propulsion by stringing a wire tether 33 to 100 feet (10 to 30 m) long between two CubeSats. The idea is that solar panels would provide electricity, which would run through the wire. As the satellite orbits the Earth, the ionosphere completes the circuit and, because a force is exerted on a wire when it conducts a current in a magnetic field, the tether generates thrust that can be used to boost the spacecraft into a higher orbit. As the force isn't very great, such an approach wouldn't be feasible for larger satellites, but the hope is it will be enough to allow small satellites to compensate for the drag of the atmosphere.

The result of two and half years of work, MiTEE-1 won't actually produce any thrust. Instead, it will consist of a satellite about the size of a loaf of breadbox and another about the size of a smartphone that deploys on a one-meter (33-in) rigid boom. This will measure how much current can be drawn from the ionosphere under various conditions.
The data from the mission will be used for planning and building the next MiTEE satellite, which will demonstrate the electric propulsion system concept in operation.

More information is available at: https://newatlas.com/space/cubesat-earth-magnetic-field-boost-orbit/.

[ANS thanks Jeff Davis and newatlas.com for the above information.]

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   AMSAT, along with our ARISS partners, is developing an amateur
   radio package, including two-way communication capability, to
           be carried on-board Gateway in lunar orbit.

   Support AMSAT's projects today at https://www.amsat.org/donate/
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A multi-point telebridge contact means that each student will be on the telebridge from their own home.

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html.

[ANS thanks Charlie Sufana, AJ9N for the above information.]

Shorts from All Over

+ New Keplerian Element Set orb21007.2l.amsat Available
Updated Keplerian elements were released on January 7, 2021 and are available at:
https://mailman.amsat.org/hyperkitty/list/keps(a)amsat.org/.

[ANS thanks Ray Hoad, WA5QGD for the above information.]

+ 31st Anniversary of LO-19
Members of AMSAT Argentina will celebrate the 31st anniversary of the LUSAT (LO-19) satellite with the callsign LU7AA January 16-24, 2021. Stations will be QRV on HF on SSB, FT8, and CW. An award is also available. QSL via LU7AA direct or by eQSL.
More information is available at http://lu4aao.org/lu7aa/cert_31_aniv_lusat_2021.htm.

[ANS thanks JoAnne Maenpaa, K9JKM for the above information.]

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of six post-secondary years in this status.

Contact info at amsat dot org for additional student membership information.

73,
This week's ANS Editor,
Frank Karnauskas, N1UW
n1uw at amsat dot org

Sent via AMSAT-BB(a)amsat.org. AMSAT-NA makes this open forum available to all interested persons worldwide without requiring membership. Opinions expressed are solely those of the author and do not reflect the official views of AMSAT-NA.

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